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46. (original) The apparatus of claim 45, wherein each context comprises a validity indicator, and wherein the result/status logic is operably coupled to set the validity indicator in each context when the corresponding memory access is complete and the result/status information is available.

47. (original) The apparatus of claim 32, wherein the memory interface device is a programmed programmable logic device.

48. (original) The apparatus of claim 32, wherein the memory interface device is an application specific integrated circuit.

REMARKS

Claims 34 – 36 and 38 have been amended. Claims 1 – 32 and 34 – 48 are pending in this Application. Reconsideration and further examination is respectfully requested.

Claim Objections

Claims 34 – 38 were objected to because they improperly depended from a previously cancelled claim. Claims 34 – 36 and 38 have been amended to properly depend from claim 32. Claim 37 now properly depends from claim 36.

Claim Rejections – 35 USC § 103

Claims 1, 4 – 5, 15, 17, 20 – 21, 31 – 32, 36 – 37 and 47 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette (US PAT. 6,606,698) in view of Peck, Jr. et al. (US PAT. 6,741,258, hereinafter “Peck”). This rejection is respectfully traversed.

The Applicant’s independent claim 1 sets forth:

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"A memory interface device for interfacing a number of host applications to a memory device, the memory interface device comprising:

a host interface for interfacing with the number of host applications in a protocol associated with the corresponding host application;

a memory interface for interfacing with the memory device wherein one or more of the host applications and the memory device operate in response to different protocols;

a number of contexts operably coupled to the host interface for receiving memory access requests from the number of host applications and providing result/status information to the number of host applications, wherein at least one context is provided for each host application; and

control logic operably coupled to obtain memory access requests from the number of contexts, translate the memory access requests into memory access requests in accordance with a protocol of the memory device, interact with the memory device over the memory interface for servicing the memory access requests on behalf of the number of host applications, and provide the result/status information to the number of host applications via the number of contexts in accordance with the protocol associated with each of the number of host applications."

An implementation of the Applicants' invention operates to translate requests between multiple different host applications and a memory. Each host application has at least one of its own contexts that stores the requests and returns result/status information to the host application.

In order to properly maintain a rejection under 35 U.S.C. 103(a), the prior art reference, or references when combined, must teach or suggest all the claim limitations. The Office Action admits, and the Applicants concur, that Fradette fails to teach or suggest the Applicants' claimed "number of contexts ... providing result/status information to the number of host applications, wherein at least one context is provided for each host application". However, the Office Action asserts that Peck discloses the number of contexts in the form of translation lookaside buffers,

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and that the hit/miss information generated by the translation lookaside buffers operates as the claimed "providing result/status information". The Applicants respectfully disagree.

The Applicants note that the hit/miss information generated by a translation lookaside buffer of Peck is not returned to the host application. Rather, in the event of a hit, the translation lookaside buffer proceeds to translate a linear address. In the event of a miss, the linear address is forwarded to the GART walk device to retrieve translation information from memory. The hit/miss information is not sent back to the processors of Peck; in fact, the hit/miss process is transparent to the processors. See Peck Col. 4 line 63 – Col. 5 line 10. Peck therefore fails to teach or suggest the Applicants' claimed "number of contexts ... providing result/status information to the number of host applications, wherein at least one context is provided for each host application". Since neither Fradette, Peck, nor the combination of the two teach or suggest this claimed limitation, The Applicant respectfully asserts that claim 1 and its dependent claims 4 – 5 and 15 are in condition for allowance.

The Applicant's independent claims 17 and 32 contain limitations analogous to those of claim 1. The Applicant therefore respectfully asserts that claim 17 and its dependent claims 20-21 and 31, and claim 32 and its dependent claims 33, 36-37 and 47 are also in condition for allowance.

Claims 2, 16, 18, 34, and 48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette and Peck in view of Wentka et al. (US PAT 5,968,114). This rejection is respectfully traversed.

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Claims 2 and 16 are dependent upon claim 1. Claim 18 is dependent upon claim 17.

Claims 34 and 48 are dependent upon claim 32. As previously set forth, Fradette and Peck fail to teach or suggest the multiple contexts for receiving memory access requests and providing result/status information to the host applications. Wentka adds nothing further to Fradette and Peck that would suggest the claimed multiple contexts. Since Fradette, Peck, and Wentka, taken alone or in combination, fail to teach or suggest the claimed contexts, the Applicant respectfully asserts that claims 2, 16, 18, 34, and 48 are allowable for the reasons set forth with regard to claim 1.

Claims 3, 19, and 35 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette and Peck in view of Bauman et al. (US PAT 5,875,472). This rejection is respectfully traversed.

Claim 3 is dependent upon claim 1. Claim 19 is dependent upon claim 17. Claim 35 is dependent upon claim 32. As previously set forth, Fradette and Peck fail to teach or suggest the multiple contexts for receiving memory access requests and providing result/status information to the host applications. Bauman adds nothing further to Fradette and Peck that would suggest the claimed multiple contexts. Since Fradette, Peck, and Bauman, taken alone or in combination, fail to teach or suggest the claimed contexts, the Applicant respectfully asserts that claims 3, 19, and 35 are allowable for the reasons set forth with regard to claim 1.

Claims 6 – 7, 9 – 10, 12, 22 – 23, 25 – 26, 28, 38 – 39, 41 – 42, and 44 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette and Peck in view of Hughes et al. (US PAT 5,584,582). This rejection is respectfully traversed.

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Claims 6 – 7, 9 – 10, and 12 are dependent upon claim 1. Claims 22 – 23, 25 – 26, and 28 are dependent upon claim 17. Claims 38 – 39, 41 – 42, and 44 are dependent upon claim 32. As previously set forth, Fradette and Peck fail to teach or suggest the multiple contexts for receiving memory access requests and providing result/status information to the host applications. Hughes adds nothing further to Fradette and Peck that would suggest the claimed multiple contexts. Since Fradette, Peck, and Hughes, taken alone or in combination, fail to teach or suggest the claimed contexts, the Applicant respectfully asserts that claims 6 – 7, 9 – 10, 12, 22 – 23, 25 – 26, 28, 38 – 39, 41 – 42, and 44 are allowable for the reasons set forth with regard to claim 1.

Claims 8, 11, 13 – 14, 24, 27, 29 – 30, 40, 43, and 45 – 46 were rejected under 35 U.S.C. 103(a) as being unpatentable over Fradette and Peck and Hughes, further in view of Bauman. This rejection is respectfully traversed.

Claims 8, 11, and 13 – 14 are dependent upon claim 1. Claims 24, 27, and 29 – 30 are dependent upon claim 17. Claims 40, 43, and 45 – 46 are dependent upon claim 32. As previously set forth, Fradette and Peck fail to teach or suggest the multiple contexts for receiving memory access requests and providing result/status information to the host applications. Hughes and Bauman add nothing further to Fradette and Peck that would suggest the claimed multiple contexts. Since Fradette, Peck, Hughes, and Bauman, taken alone or in combination, fail to teach or suggest the claimed contexts, the Applicant respectfully asserts that claims 8, 11, 13 – 14, 24, 27, 29 – 30, 40, 43, and 45 – 46 are allowable for the reasons set forth with regard to claim 1.

Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully

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requested that the Examiner telephone Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

10/7/04

Date

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